MPEG-1, 2 & 4

**VBrick EtherneTV-NXG 1 & 2 Video on Demand Server
Quick Start Guide
Version 2.0.0**

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Quick Start

1. Unpack the EtherneTV-NXG1 Server.

Each shipment comes with:

- An introduction letter
- Quick Start Guide and Release Notes (located on CD-ROM 8250-0002-0000)
- (1) EtherneTV-NXG system
- Power cord
- Rack mount kit (Kit type must be specified)
- Recovery CDs and a floppy disk that contains the NXG license **(do not lose)**

NOTE: The server comes preloaded with the Operating System and VOD application software. After the system is powered, a kick-start wizard will guide you through the initial setup for permanent operation.

Before you Begin

Make sure that there is:

- A separate PC running Internet Explorer
- PS/2 mouse
- Keyboard
- Monitor or console

NOTE: If you have purchased an external storage device such as a SCSI attached DAS it must be connected prior to powering up the NXG system.

Please obtain the following information for the EtherneTV-NXG before applying power to the unit:

NOTE: Unix commands are case sensitive and should be entered as shown.

INFORMATION REQUIRED	Answer	Example
Hostname (that will be assigned to EtherneTV VOD)		vbvodnxg
EtherneTV VOD IP address		172.17.6.55
Default gateway (router)		172.17.1.5
System network netmask		255.255.0.0
Broadcast IP address		172.17.255.255
Default network IP address		172.17.0.0
Domain name		vb.loc
DNS IP address		64.80.0.162
EtherneTV VOD serial number (from back of unit)		unused at this time
Server name (Not Applicable)		unused?

TABLE 1

2. Set up the EtherneTV-NXG Server

1. Connect monitor, keyboard and mouse on the back of the unit, following these steps:

NXG-1
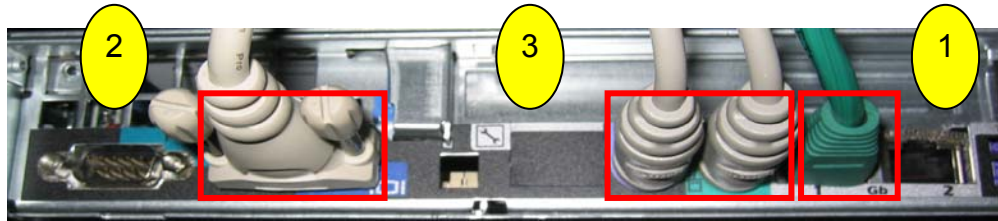
NXG-2

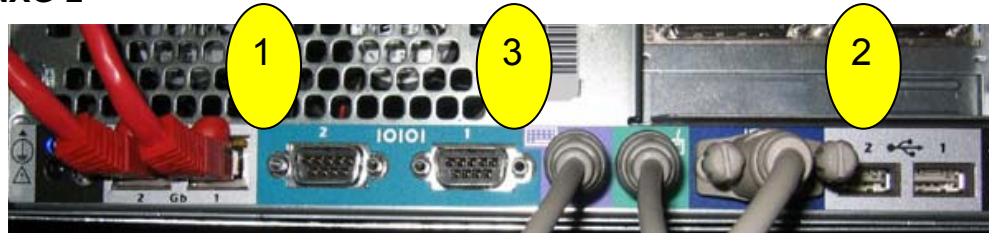- If rack mounting the unit, mount the EtherneTV-NXG server in the rack, using the rack mount kit provided.
- Connect the EtherneTV-NXG server to the network by plugging the 10/100/1000 BaseT Ethernet cable into the Ethernet port 1① on the rear of the unit.
- Connect the monitor cable to the video port at the back of the EtherneTV-NXG server ②. Turn the monitor on.
- Connect a mouse and keyboard to the appropriate ports at the back of the EtherneTV-NXG ③
- Plug the EtherneTV-NXG server into a power source, using the power cord provided.
- Turn the EtherneTV-NXG server's **main power** on by pressing the power switch at the front of the unit. ④
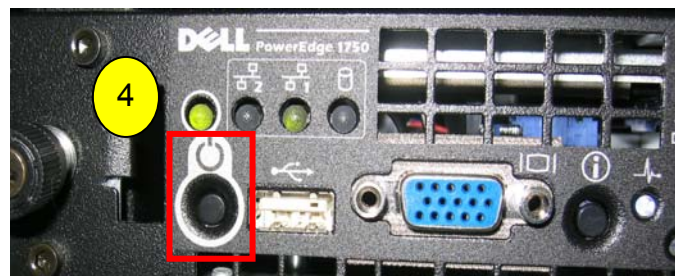
- **NOTE:** the EtherneTV-NXG server will boot and automatically load using the default settings – this may take several minutes.

2. When booting is complete, type "Y" and **Enter** to continue.
Make sure the information from the "Before You Begin" section in the first part of this procedure is available, then press **Enter** to continue.

Wait 5 to 8 minutes for the unit to fully power up.

3. Configure the EtherneTV-NXG

You will be prompted for the following information:
1. The system hostname
2. The system ip address
3. The default gateway ip-address
4. The system netmask
5. The default network ip-address
6. The system broadcast address
7. The system domain
8. The dns server ip-address
```
Quit now, if you do not have this information.
Continue?
Please enter y or n
```

Verify that the required information has been obtained from Table 1 before proceeding:

Make required entries:

> **NOTE:** Unix commands are all lower case and can contain no spaces. Use an underscore _ for separation. Use the values you determined in Table 1.

Enter the system's new hostname in lowercase:

- Enter the name of the host and Enter <cr>
- Type "y" and and Enter <cr> to continue

Enter the system's new IP address:

- At the prompt, enter the IP address of the EtherneTV-NXG server and Enter <cr>
- Type "y" and and Enter <cr> to continue

Enter the system's new default route (gateway) ip-address:

- At the prompt, enter the IP address of the default router and Enter <cr>
- Type "y" and and Enter <cr> to continue

Enter the system's new network netmask:

- At the prompt, enter the network mask and Enter <cr>
- Type "y" and and Enter <cr> to continue

Enter system's new broadcast ip-address:

- At the prompt, enter the broadcast IP address and Enter <cr>
- Type "y" and and Enter <cr> to continue

Enter the system's new default network ip-address:

- At the prompt, enter the default network IP address and Enter <cr>
- Type "y" and and Enter <cr> to continue

Enter the system's new domain for the server:

- At the prompt, enter the server's domain name and Enter <cr>
- Type "y" and and Enter <cr> to continue

Enter the system's new DNS IP address:

- At the prompt, enter the DNS server's IP address and Enter <cr>
- Type "y" and and Enter <cr> to continue

Verify entries

The previous entries will be displayed.

- Review the information you entered. If everything appears to be correct, type "**y**" and **Enter** to continue. Otherwise, type "**n**" and repeat the setup process.

- The EtherneTV-NXG server displays the configuration files it will update. Type "**y**" then press **Enter** to continue. The changes will be displayed for each of the following files. Review each, type "**y**" to accept, then press **Enter** to continue.

    o   /etc/sysconfig/network

    o   /etc/sysconfig/network-scripts

    o   /etc/resolve.conf

    o   ServerName in httpd.conf

- When asked if you have completed reviewing the files to be updated, type "**y**" then press **Enter** to continue.

- Wait several minutes for setup to complete. A message will be displayed:

```
Done
Omnibase setup is complete; press enter to continue to login
```

- Press **Enter**

- Enter the login and password when prompted:

At the login prompt, type "**root**" then press **Enter**.
At the password prompt, type "**omnibase**" then press **Enter**.

- **NOTE: If you encounter an error during set-up or if the server is moved to another network you MUST perform the following operation:**

Rename the setup file as follows:
     root# mv /opt/vbricksetup/.vbrickmbase_is_setup /opt/vbricksetup/.vbrickmbase_is_not_setup
Reboot the server
root# reboot

4. Verify EtherneTV-NXG Server Operation

Verify that there is an amber link light on the EtherneTV-NXG server's Ethernet port.

- **From the Linux Administrator command line:** Ping the local gateway IP address.

    Example: ping 172.17.1.5 (use your appropriate local gateway IP address)

- **From a separate PC:** Ping the EtherneTV-NXG server from a PC using the EtherneTV-NXG1 IP address.

    Example: ping 172.17.6.55 (use the IP address of your EtherneTV-NXG server)
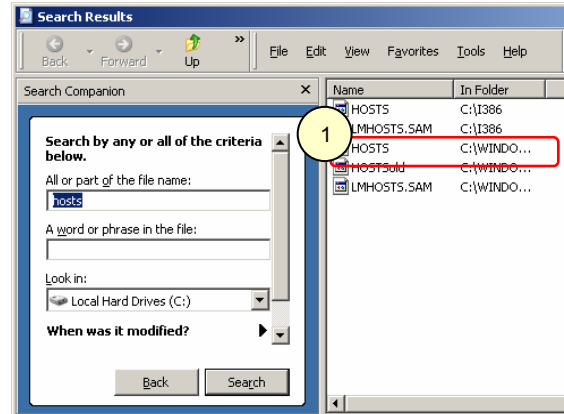
NOTES:

- **CRITICAL NOTE:** The IP address of the EtherneTV-NXG server must be made as a hostname entry in the DNS server in order for the server to be recognized by desktop clients through its domain name (ie: **http://vb.loc**), rather than using the IP address (ie: http://172.17.6.55).

- For test purposes, the MIS Administrator can change the necessary DNS (host) entry in the local PC **hosts** file. Modify the "hosts" file on the local PC to resolve the EtherneTV-NXG IP address with the actual hostname:

  o Search for the file named "hosts" on the local PC ①.

    NOTE: If there is more than one file named "hosts" select the file located in the Windows/System or Windows/system32 folder.

  o Modify the file by using the right mouse button to choose the "Open" or "Open With" selection to use Wordpad or Notepad to make the necessary entry highlighted in bold②.

```
# Copyright (c) 1993-1999 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#      102.54.94.97     rhino.acme.com          # source server
#       38.25.63.10     x.acme.com             # x client host

172.17.6.55              vbvodnxg1
```

Changing Time & Time Zone

When the EtherneTV-NXG is working in conjunction with the EtherneTV-MCS Media Control Server, in order for the time to appear correctly, it is necessary to set the time zone to match that of the EtherneTV-MCS server.

In order to manually change the time zone, follow the directions below to edit the /etc/sysconfig/clock file and then make a new soft link to /etc/localtime.

1)From the Linux prompt, type "startx<cr>". This launches the Red Hat graphical user interface.

2)Open a command line interface from the GUI

3)Type /etc/init.d/mediabase stop

4) At the lower right corner of the screen, right click on the "time" and select "Adjust Date & Time"

5) From the pull-down menu, select the time zone you are in. For example, "America/Detroit", then click "apply and "OK" to close the window. Adjust the time as needed.

6) Return to the command line interface and type /etc/init.d/mediabase start

7) At the lower left corner of the screen, right click on the "Red Hat" icon and select "logout" and click on the "Logout" button to return to the Linux prompt.

1: Introduction

VBrick's EtherneTV-NXG server has been integrated with the EtherneTV family of products including the EtherneTV-MCS Media Control Server, MPEG-1/2/4 streaming encoders, Windows-based desktop computers (future Apple MAC support for MPEG-4 only) and the EtherneTV-STB. The EtherneTV-NXG delivers stored MPEG assets as unicast streams (with full VCR-like functionality such as Stop/Pause/Play/FF/Rew) across an Ethernet network. The EtherneTV-NXG is built on a DELL hardware platform. Other features include the ability to schedule asset playback, asset searching, user and system statistics, plus much more. **EtherneTV-MCS is required to gain the full benefits of the EtherneTV-NXG server and is sold separately.**

In order to set up the EtherneTV MCS server, please follow the directions in the EtherneTV MCS Administrator's Guide. Once the EtherneTV MCS server is setup and configured, then end users can access video the EtherneTV-NXG server through the MCS web interface.

VBrick uses its own software-based components to decode streams on the desktop. There is no client side software to install. The EtherneTV-MCS automatically downloads components to the desktop PC upon the user's initial access to the system.

Overview

System Components

These are the main components that together make up VBrick's EtherneTV Media Distribution System:

- The EtherneTV-NXG Video on Demand Server. (NXG1 or 2)

- The EtherneTV-MCS Media Control System. (MCS)

- VBrick MPEG-1, MPEG-2 encoder/decoders and MPEG-4 encoders.

- Standard Windows PCs can be used by end users for both administrative control and content access.

- VBrick EtherneTV-STB Set Top Boxes.
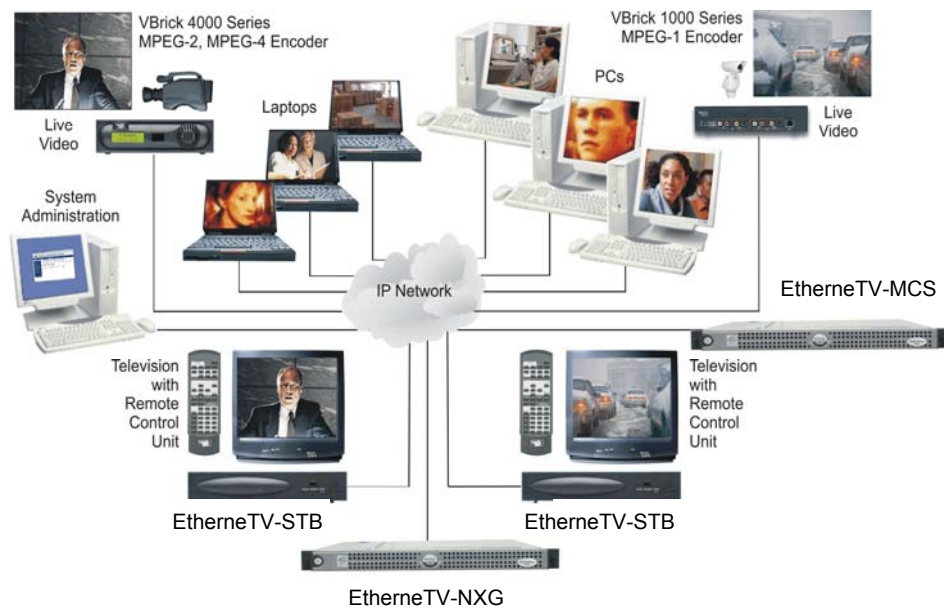
2: Using the EtherneTV Media Control Server

Access the server

From a PC, enter the IP address or hostname to access the MCS.
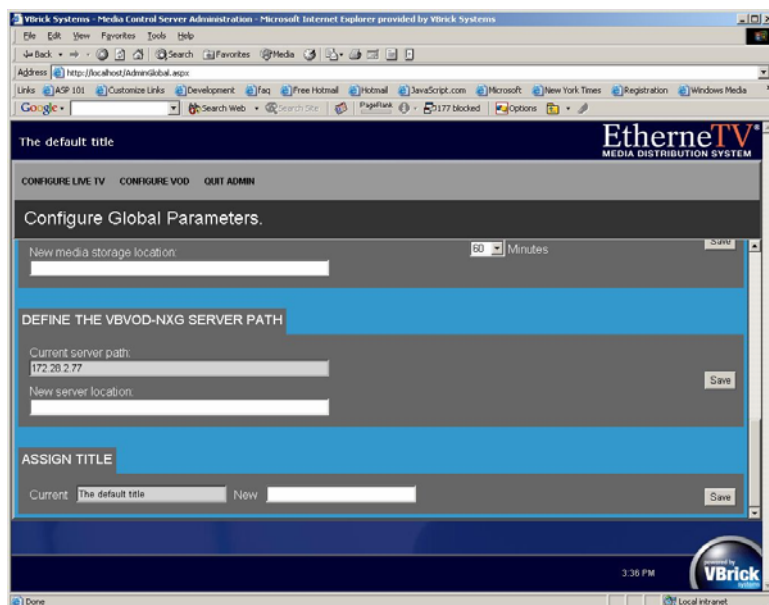
EtherneTV-MCS Version 1.0.0
Version 2.0.0 is different

### Procedure (Version 1.0.0)

1. Browse to "http://<MCS-Location or server name>/admin.aspx"

2. Click "Media Control Server"

3. Enter User ID (admin) and Password (admin), click "Logon"

4. Click "Global Variables"

5. Make browser full screen (F11)

6. Scroll down to "DEFINE THE VBVOD-NXG SERVER PATH" and enter the new server IP address or server name where noted.

7. Click "save"

8. Quit admin

Procedure (Version 2.0.0)

1. Browse to "http://<server name>/admin"

2. Enter User ID (admin) and Password (admin), click "Login"

3. Click "Global Settings"

4. Click "Servers"

5. Add the server Domain Name or IP Address, Description and ftp user (vbrickuser)

6. Click "Add"

Accessing MCS

In order to access the MCS launch your browser and enter the new link in the URL area as http://"MCS name or IP address"
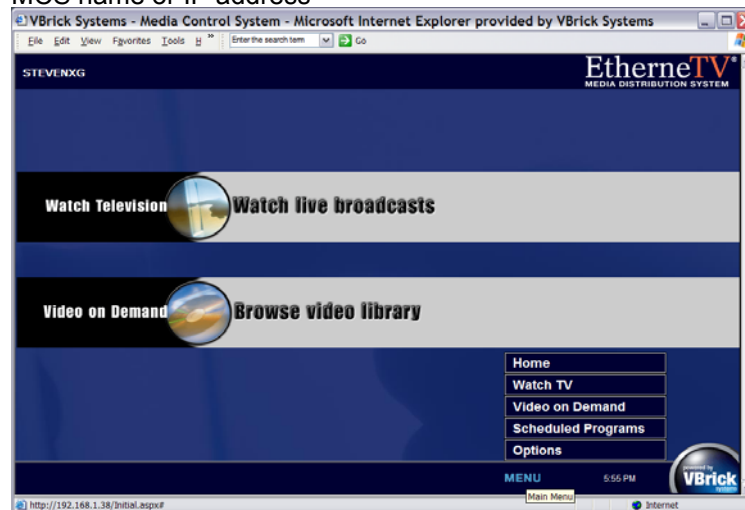

EtherneTV-MCS Version 1.0.0

EtherneTV-MCS Version 2.0.0

Download Components

VBrick uses its own software-based components to decode streams on the desktop. These components include decoders and filters necessary to view MPEG-1, MPEG-2 and MPEG-4 streams on a PC using software based decoding. The EtherneTV-MCS automatically downloads these components to the desktop with the user's permission.

If this is a new installation, it is necessary to answer **Yes** to security requests before components are downloaded.
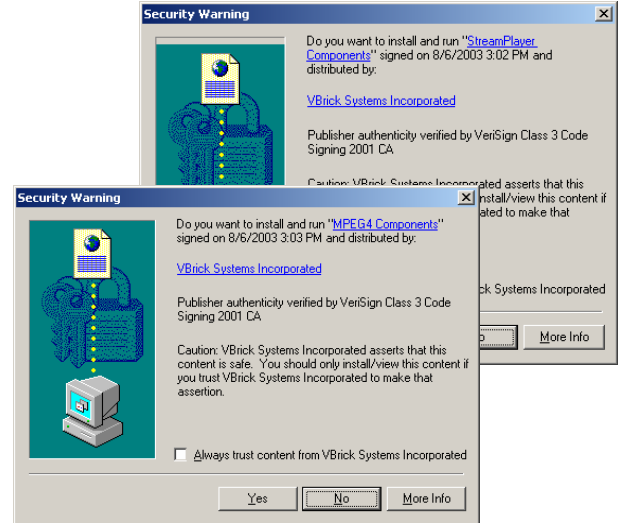

Watch Live Broadcasts

This link provides access to any VBrick MPEG-1, MPEG-2 or MPEG-4 live stream delivered from a VBrick Encoder or any file multicasted from the EtherneTV-NXG server. Also MPEG-4 unicast from a VBrick encoder via RTSP. A list of streams is shown on the left; clicking on a program from the Program Guide listing on the left displays video from the stream in the window on the right. From this point you can click the Full Screen button on the player to go full screen (use the escape key to exit full screen), or click on Launch External Player to launch a separate player window that can be moved or resized. Since this is live video FF/REW/Pause are inoperative.

EtherneTV-MCS Version 1.0.0
Version 2.0.0 appears slightly different

Browse Video Library

This link provides direct access to the EtherneTV-NXG server for watching stored Video-On-Demand files. When the user accesses this page, the MCS server builds a web page of available videos on the EtherneTV-NXG server. Simply clicking on the video will begin it playing in the preview window. From this point you can click the Full Screen button on the player to go full screen (use the escape key to exit full screen), or click on Launch External Player to launch a separate player window that can be moved or resized.

VoD video allows full VCR/DVD-like Play, Pause, Stop, Fast Forward, Rewind, and Seek functionality.[1]
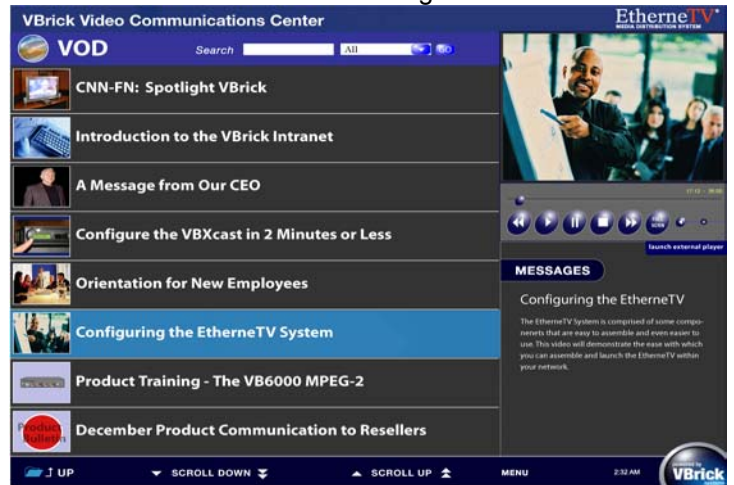
EtherneTV-MCS Version 1.0.0
Version 2.0.0 appears slightly different

Scheduled Programs

Scheduled Programs displays content scheduled to be shown at a particular date and time. The content can be live streams from a VBrick encoder or stored files multicast from the EtherneTV Video on Demand NXG server.

To access the Scheduled Programs page, select the Menu button from any page and select Scheduled Programs. Scheduled programs that are currently playing will display a Now Playing message and can be played directly from the Scheduled Programs page.

> **NOTE:** Programs in the process of being played are also displayed in the Live Video selection.
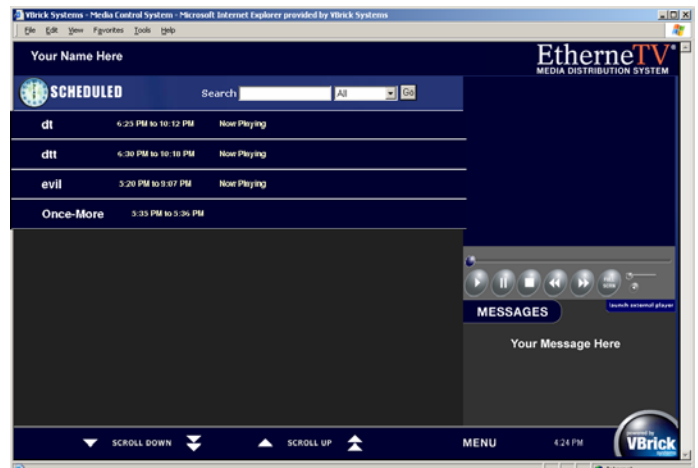
EtherneTV-MCS Version 1.0.0
**Version 2.0.0 appears slightly different**

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[1] Fast forward and rewind available for MPEG-1 and MPEG-2 only. Seeking is available for all formats.

Browse and Configure EtherneTV-NXG1 System

EtherneTV-NXG Administration

The server comes pre-loaded with VBrick content. The only time it is necessary to reload this information would be in the event it is necessary to upgrade or restore the content.

- Open a web browser on the VOD administrators PC and type the following URL:
    - **http://vbvodnxg1/mbase/admin/** (make sure you include the final /).
    - To logon to the system:
        - User Name = **mbase**
        - Password = **mbase-admin**
        - In the browser, create a "favorite" or "bookmark" this page.
- To access the online documentation, select the link "Admin Guide", from here you can access the Kasenna MediaBase XMP Installation and Configuration Guide and the Kasenna MediaBase XMP Administrator's Guide**.**
- Follow the instructions in these two manuals for system administration and video content management.
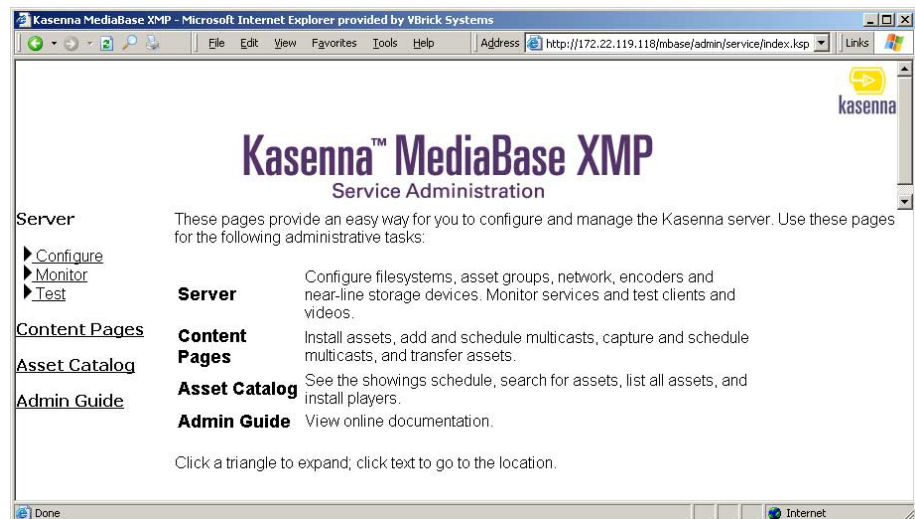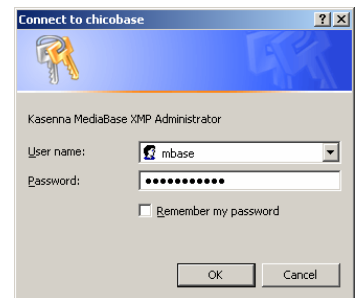
How-to Ingest content

Necessary equipment:

- EtherneTV-NXG server
- EtherneTV-MCS server
- PC
- Ethernet switch or hub
- Ethernet, video, and audio cables

Instructions:

1. Log on to the Windows PC and open Internet Explorer browser

2. In web browser window, enter the ipaddress or name of server followed by the application (i.e. http://172.22.163.100/mbase/admin/content/)

3. Login as: mbase

4. Password: mbase-admin

5. Click on Content Pages>Video>Add Video/Audio

6. In the Source File field , click on Browse

7. From new window, click on /vbrick, then OK

8. From next window, select the file MP2test_6mbps.mpg (or other mpeg file)

9. Click on OK, (This will insert the source file in the source file window)

10. In Video Name window enter a name that indicates the content. (Important - the file extension MUST end in .mpg for Mpeg1&2 and .mp4 for Mpeg4 files!!!!)

11. Select the correct encoding type (MPEG 2)

12. Click on Add

13. Next we will monitor the ingestion by clicking on Content>Video>Find/Modify

14. Click on Find

15. Your file should appear in the list

16. To test, playback the file via the MCS

FTP Files and File Ingestion

Copy remote files and Ingest content - **Necessary equipment:**

- EtherneTV-NXG server

- PC

- Ethernet switch or hub

- Ethernet, video, and audio cables

- CD containing video files

Instructions:

1. Logon to PC, and insert the CD into your PC.

2. Change to cdrom drive location (e.g. E:)

3. Open a command window, and type ftp x.x.x.x

4. FTP logon as vbrickuser

5. FTP password vbrickuser

6. Type cd /vbrick

7. Type bin

8. Type put zzz.mpg (zzz=video file name.mpg); quit ftp.

9. Open Internet Explorer browser, enter the ipaddress or name of server followed by the application (i.e. http://172.22.163.100/mbase/admin/content/)

10. Login as: mbase

11. Password: mbase-admin

12. Click on Content Pages>Video>Add Video/Audio

13. In the Source File window, click on Browse

14. From new window, click on /vbrick

15. From next window, select the file you uploaded

16. Click on OK, (This will insert the source file in the source file window)

17. In Video Name window enter a name that indicates the content. (Important - the file extension MUST end in .mpg for Mpeg1&2 and .mp4 for Mpeg4 files!!!!)

18. Select the correct encoding type (MPEG1, 2 or 4)

19. Click on Add

20. Next we will monitor the ingestion by clicking on Content>Video>Find/Modify

21. Click on Find

22. Your file should appear in the list

Automatic File Backup

The use of a dedicated drive 0 for the OS and VoD software benefits customers in two ways. Firstly, OS patches or new VoD software updates only get applied to drive 0, leaving all the content drives untouched. Secondly, both VoD servers use a mySQL database to index and manage all video content and VoD configuration information. While this database is stored on drive 0, each evening the system automatically backs up the database onto the RAID drives. Should drive 0 fail, the database restore procedure uses this backup copy to rebuild the database.

The Auto Backup feature is on by default and it is recommended that it be left on. However if for some reason it is not required the following procedure should be used to turn this feature off:

Note: If you get lost during editing hit "Esc" twice to leave edit mode. Hit ":" to return to command mode.

- Go to the NXG command line.
- Type "crontab -e" at the command line; this puts you into an editor for the crontab (the cron table). The editor is the "vi" editor.
- Using the down arrow key, scroll down to the bottom of the file. A couple of lines up from the bottom you will see two lines:

    ```
    0    4    *    *    *    /opt/vbricksetup/backup_mediabase_database
    0    3    *    *    *    /opt/vbricksetup/clear_old_mbdump_files
    ```

- Cursor up to these lines and comment out this section by:
    - Hit the "i" key to go into insert mode
    - Type the "#" key in front of both these two line to comment them out

Hit <esc>, then ":" to go into command mode, then enter "wq" to save the changes and exit the editor.

File Backup Cautions

Irrespective of the Auto Backup there are situations where the backup may not take place soon enough after file ingestion. Therefore it is highly recommended that a separate copy of the original content after ingestion be maintained for at least two days until the auto backups are made.

License Key Re-Installation

The license is pre-installed on the server from the factory. You do not have to re-install this license except for system restoration. Should you need to re-install the license, use the following steps. A floppy disk is included that contains the license key for the EtherneTV-NXG server. The key should be added to the /var/flexlm/license.dat file. If this file does not exist then the file should be created in the specified path (/var/flexlm/). The following steps will be used to make the floppy disk available to the Linux O/S:

From the root type: mkdir /floppy (enter)

Type: mount –t vfat /dev/fd0 /floppy (enter)

cd /floppy

You will now be able to copy the license file from the floppy to: /var/flexlm/license.dat (NXG1) or /var/kasenna/license.dat (NXG2)

3: Reference

Operation Tips

- All assets that are installed into the server should have backup copies available in the event of disk corruption. This will allow for an easy restoration of the system.

- StreamPlayerPlus allows the recording of live streams to MPEG-1, MPEG-2 and MPEG-4 files. Once saved the files can then be installed on the EtherneTV-NXG1 server for playback. Make sure the "hinting" option is checked when recording MPEG-4 files.

- When recording MPEG-4 and MPEG-2 files using StreamPlayer Plus software, it is advisable to keep the length of the record to under 50 minutes to facilitate creating playlists and keep viewing time manageable.

- The controls for MPEG-4 Fast Forward and Rewind are not currently supported; however, slide bars are supported and provide the same functonality.

- As the disks become full the performance of head seek times diminishes and file ingestion may fail.

- Do not use spaces in filenames. Use underscores; ie: **my_history_class.mp4**.

- Apple QuickTime 6.5, containing native MPEG-4 support, is the recommended MAC desktop player for accessing MPEG-4 files from the EtherneTV VOD NXG. QuickTime supports the Seek feature (accessed through a slider-bar) for MPEG-4 streams. Make sure Edit >> Preferences >> QuickTime Preferences >> Streaming Transport option is set to Automatically determine the best protocol and port ID or "use: UDP, RTSP Port ID 554".

- Samba is a widely used software package that allows Linux systems to connect to Microsoft Windows networks and seamlessly share files with Windows host computers and servers. This is the recommended method of ingesting files into the server's database. If you are connected to the Internet click **http://www.vbrick.com/support/downloads.asp** , select Application Notes and then "Samba Client Configuration". There you will find detailed information regarding the software package.